FIELD NOTES ON SOME AUSTRALIAN REPTILES AND A BATRACHIAN.

By EDGAR R. WAITE, F.L.S., C.M.Z.S., Director South Australian Museum.

Figs. 1-15.

The following are extracts from notes on observations made from time to time, mainly in the field, either by myself or by others, to whom the notes are acknowledged. For assistance in connection with the photographs and drawings I am indebted to Messrs. H. M. Hale and B. C. Cotton, of the Museum staff.

CHELONIA.

WATER TORTOISES, Chelodina and **Emydura.**

Figs. 1-3.

Karloan, a Point Macleay native, was born at a period when his people had to hunt and fish for themselves; in the days when Government rations were unthought of. He says that his tribal name is Mullentypery, the Long-necked Tortoise (*Chelodina longicollis* Shaw), bestowed in allusion to his feats in the water and his faculty for catching "turtles" when a little boy. "Mullen" is the native name of the weed among which the reptile lives. The tortoise is sought by wading, perhaps waist deep, and located by sight or groping with the hands; it does not climb on to logs, and sometimes feeds on land as well as in the water. It can tuck its head and neck completely under the margin of the shell, and lays about twenty eggs in a hole scooped in the ground; the hole is made by the reptile turning itself round and round and throwing out the sand or earth with its feet. The eggs are laid after the first rains in November or December, and the young appear in February or March. It is good to eat.

The eggs laid by one female measure 31 x 20 mm., and live examples are shown in fig. 1 (natural size).

Respecting the Murray River Tortoise (*Emydura macquarii* Gray), Karloan says his name for this species is "Ware," and that it cannot tuck its head and neck completely under the shell, as can the Mullentypery. It climbs out of the water on to partially submerged logs, where it may remain for considerable periods, but it feeds only in the water. The flesh is not so good as that of the Mullentypery, and, if much is eaten, sores are produced on the body.

Karloan's statement as to the sideways retraction of the head and neck, complete in *Chelodina* and partial in *Emydura*, might almost be inferred from an examination of the respective shells. In the former (fig. 2) it is free from the attachment of the skin, all round the front margin, for nearly an inch under the carapace in large examples, and about half that space above the plastron. In *Emydura* (fig. 3), though free at the sides, the skin converges forward under the carapace, and in the middle is attached just below the margin of the neural and first marginal plates on each side, whence it contracts, and therefore leaves a wider space. In the plastron the skin is attached close to the edge of the shell all the way round. The encroachment of the skin, in this species, may therefore prevent the complete retraction of the head and neck, an apparent disability not experienced by *Chelodina*.

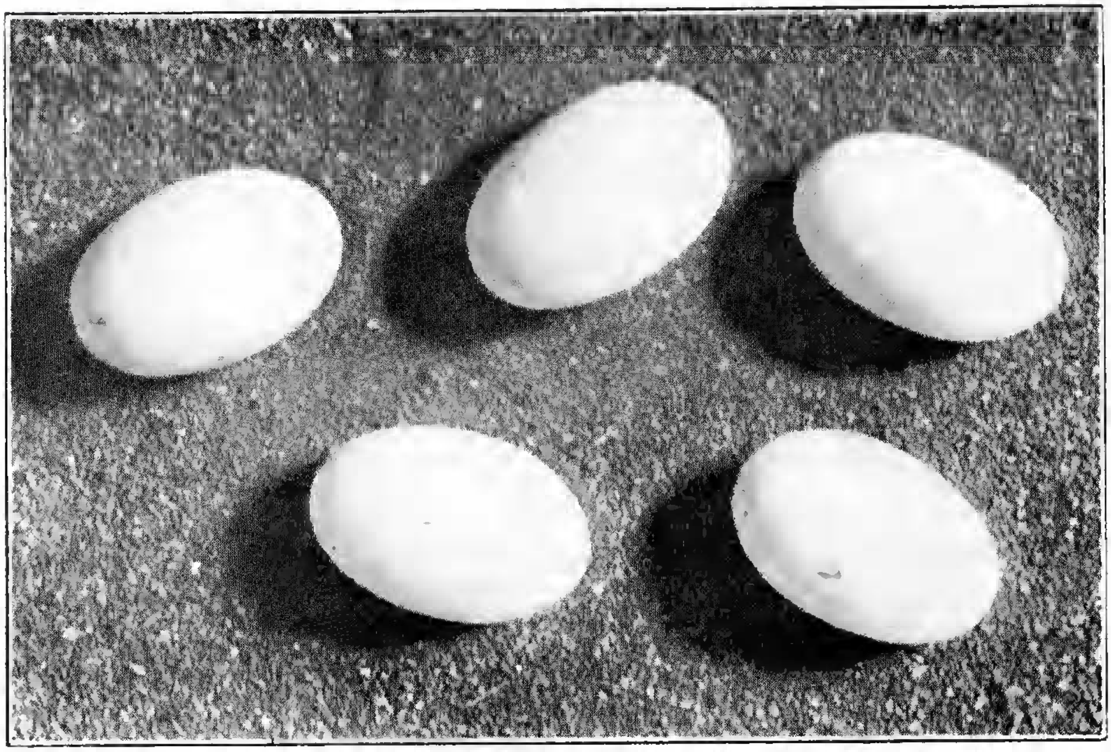

Fig. 1. Eggs of *Chelodina longicollis*. Natural size.

I am told that though both tortoises are eaten by natives, *Emydura* only is relished by Europeans, and at one time, when the chelonians were more plentiful in the vicinity of our towns than they are to-day, the Murray Tortoise was regularly caught and consigned to Adelaide, where it was sold to restaurants and served as turtle soup. *Chelodina* was, on the other hand, not utilized in any way, because "it stinks horribly."

When hatched, sometimes at considerable distances from water, the young seem to instinctively make their way to the river, and *en route* are sometimes picked up by school children. This sense of direction has been attributed to the leading of falling ground, it being common alike to marine turtles, crocodiles, etc. I have kept several Murray Tortoises in my garden: when missed from their pond they were invariably to be found against the back garden fence, the ground gently sloping in that direction, and to which the reptiles wandered in evident search for more extensive waters than had been provided for them.

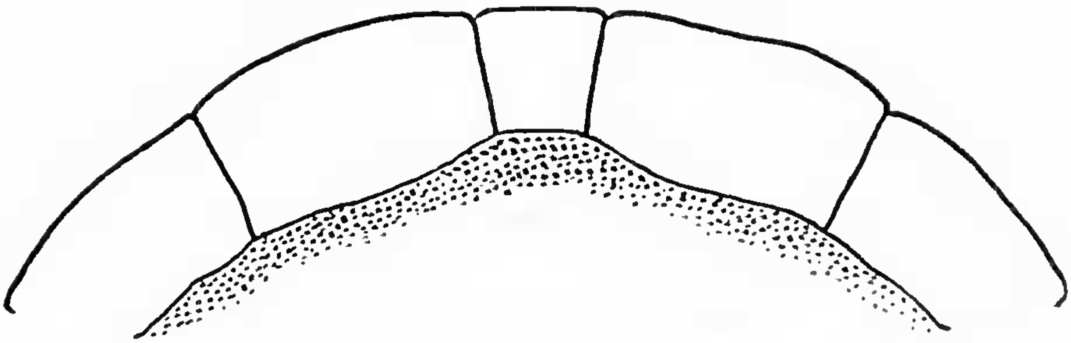

Fig. 2. Under side of front portion of carapace of *Chelodina longicollis*. The inner line represents the attachment of the skin, indicated by shading. Reduced.

There are, however, exceptions to the falling ground suggestion; in certain parts of Australia, when successions of rainy seasons are followed by periods of drought, water holes dry up, and the tortoises that may have been hatched in the vicinity, and lived in certain water holes, possibly for four or five years, are compelled to migrate. To this end they, of necessity, have to make for rising ground, and have been seen crossing ridges between low-lying pools. On a ridge between two swamps a rabbit-proof fence was erected, and later the migrating tortoises were discovered piled up dead against the wire barrier. It is alleged that tortoises eat the eggs of fishes, and at the instance of river fishermen the

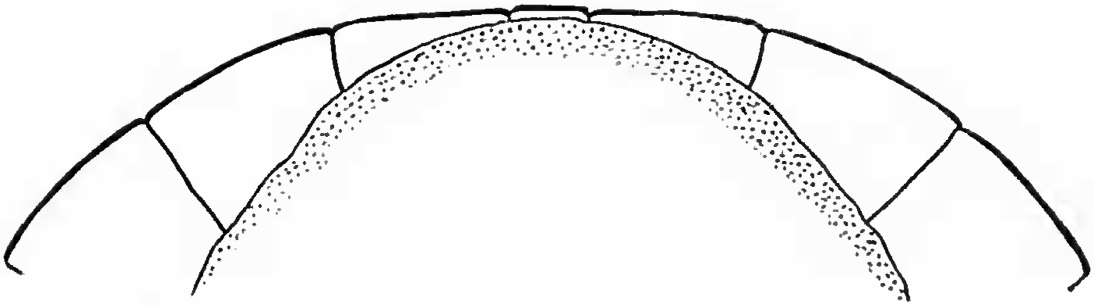

Fig. 3. Under side of front portion of carapace of *Emydura macquarii*. The inner line represents the attachment of the skin, indicated by shading. Reduced.

legislature of this and other States placed a price on the tortoise, and paid a sum for each unfortunate's head. The rabbit netting above mentioned proved a copper mine to certain astute fishermen, for, according to my informant (Mr. T. P. Bellchambers), all they had to do was to walk along the fence and decapitate the already caught chelonians, for each head of which they were duly paid by an unsuspecting Government.

It might be thought that if any of our indigenous animals are to survive the onslaught of introduced foes, such would be the rather shy and well-protected water tortoises. These reptiles do not meet their foes in the water, nor are they attacked on land: the destruction is wrought on the eggs by that arch enemy, the European fox, which digs them out of their holes and destroys batch after batch.

LACERTILIA.

DTELLA, Peropus variegatus Duméril and Bibron.

Fig. 4.

Typical examples of *Peropus variegatus* Gray and *Heteronota binoei* Gray are so distinct that one would scarcely think it necessary to look twice to determine to which species a gecko might belong. Writing of the lizards of Monte Bello Islands (off Western Australia), the late P. D. Montague says that it is remarkable that on Hermite Island these two species bear a strong superficial resemblance to one another both in size and colouration. The fact is interesting, as the two species are found together on the same ground, though *Heteronota*

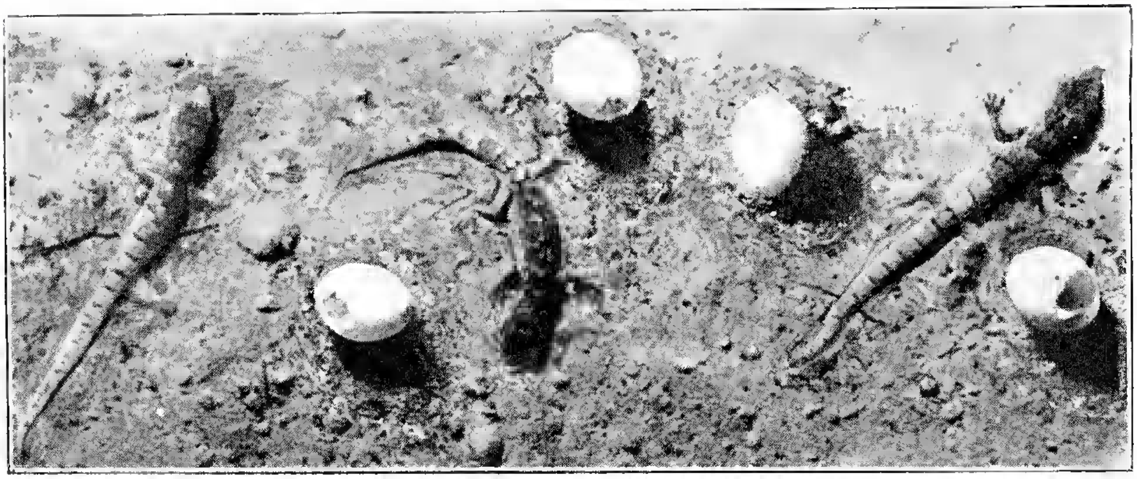

Fig. 4. Eggs and young of *Peropus variegatus*, photographed on the day of emergence. Natural size.

obtains its food on the sand and *Peropus* on the bushes above. It is unfortunate that, both in the text and explanation of plates accompanying Montague's paper, an illustration of *Peropus variegatus*, as evidenced by the dilated fingers and toes and clawless inner digits, is ascribed to *Heteronota* (1). The literary references in this article are also incorrect. Montague was killed in the Great War, and doubtless did not see proofs of his paper.

The accompanying illustration, indifferent though it is, is published to show the size of the eggs and of the young, the photograph having been taken on the day on which they emerged. As soon as hatched the young ones emitted a shrill little squeak. The eggs were presented by Mr. Edwin Ashby.

SHINGLE-BACK, Trachysaurus rugosus Gray.

Figs. 5, 6.

Also called Sleepy Lizard and Stump-tailed Lizard. This reptile is very common in the mallee districts, and varies greatly in the relative amount and disposition of the brown and yellow colouration; some examples being almost entirely brown, while in others the lighter tint preponderates. I have known of two perfect albinos, one of which, now alive, and presented to the Museum

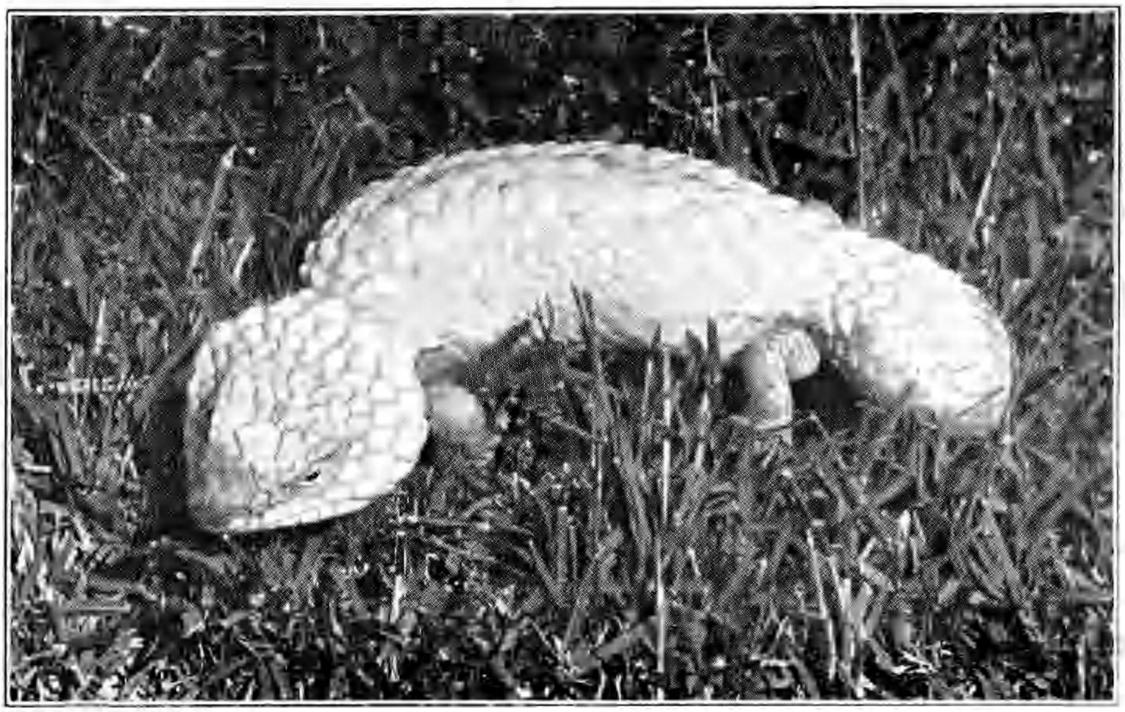

Fig. 5. Young albino of *Trachysaurus rugosus*. Reduced.

---

(1) Montague, P.Z.S., 1914, p. 640, pl. i.

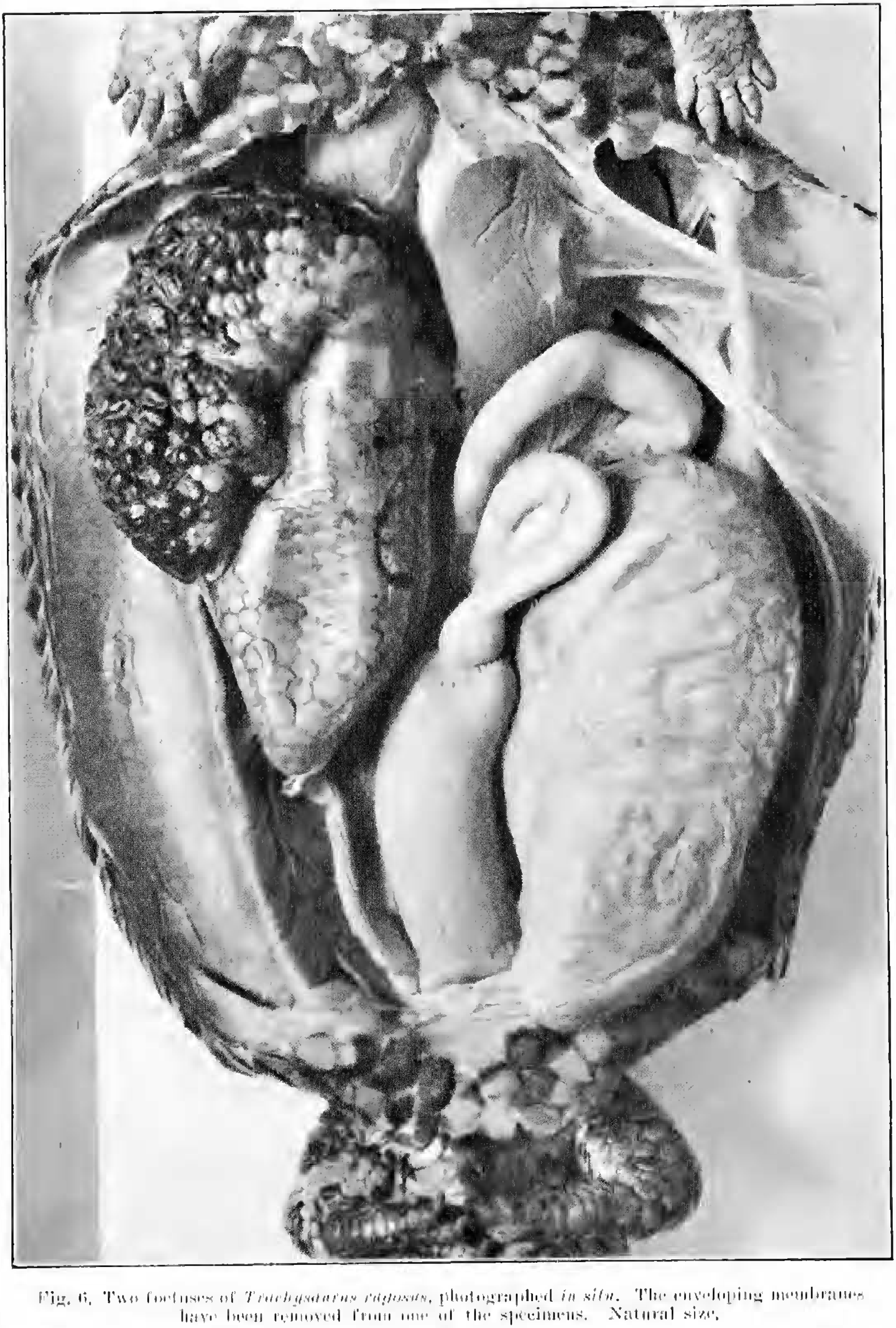

Fig. 6. Two foetuses of *Trachysaurus rugosus*, photographed *in situ*. The enveloping membranes have been removed from one of the specimens. Natural size.

by Mr. J. P. Kelly, of Monarto, is illustrated in the accompanying photograph (fig. 5). Not only is the body white and the eyes pink, but the tongue, which is normally blue, and inside of the mouth are also pink, there being everywhere an entire absence of pigment. The pineal area is clearly defined, and is well shown in the photograph: it is covered with about nine small scales.

This lizard is viviparous, and McCoy's statement (2) that it produces but a single young at a birth has been freely copied. Accidents will happen, even in the reptile world, and it is not impossible that on occasion one ovum only may be fertilized: my experience is that two young are produced, and the photograph (fig. 6) shows the two well-developed foetuses within the body of the mother. In one the membranes have been removed to show the markings, curvature of the body, and the position of the limbs, etc.

Lucas and Le Souëf (3) state that the Shingle-back has a great reputation as an inveterate enemy of snakes. No specific instances are recorded, and I fancy that the reputation is as little deserved as is that of snakes swallowing their young. This lizard is assuredly largely a vegetarian, and the berries of the native currant *(Leptomeria)* are often found in its stomach; it also eats toadstools. In captivity it readily feeds and thrives on bananas and other fruit, and eats snails quite freely. That the lizard falls a victim to snakes I know, for I have myself taken an example from the stomach of a python, which, of course, would have no difficulty in picking up the most sluggish of lizards, and of which Mr. A. G. Bolam (4) writes: "It moves along at almost a snail's or tortoise's pace, and consequently has great difficulty in getting out of anyone's way, particularly if it is crossing a track upon which vehicles run."

Another enemy is of more recent origin. The large, triangular head, suddenly contracted to the neck, was developed before the days of wire-netting, the introduction of which is responsible for a proportion of fatalities among the Shingle-backs. The lizard starts off to climb the rabbit-proof netting, and apparently tests the spaces as it ascends. It ultimately manages to get its head through one of the meshes, but as it can neither withdraw its head nor pass its body through the mesh, it is doomed to perish miserably. The Bearded Lizard *(Amphibolurus barbatus)* is similarly trapped, and I have on more than one occasion rescued specimens from their predicament.

---

(2) McCoy, Prod. Zool. Vict., dec. xi, 1885, p. 4.

(3) Lucas and Le Souëf, "Animals of Australia." 1909, p. 246.

(4) Bolam, "The Trans-Australian Wonderland."

OPHIDIA.

BLIND SNAKE, Typhlops australis Gray.

Fig. 7.

The Australian members of the genus *Typhlops* were somewhat fully dealt with in the "Review of Australian Typhlopidae" (⁵), and to the present there is little to add. Three photographs of *T. bituberculatus*, a somewhat slender form, accompanied the paper. *T. australis* is usually of much stouter habit, and the illustration (fig. 7) represents an average example of natural size.

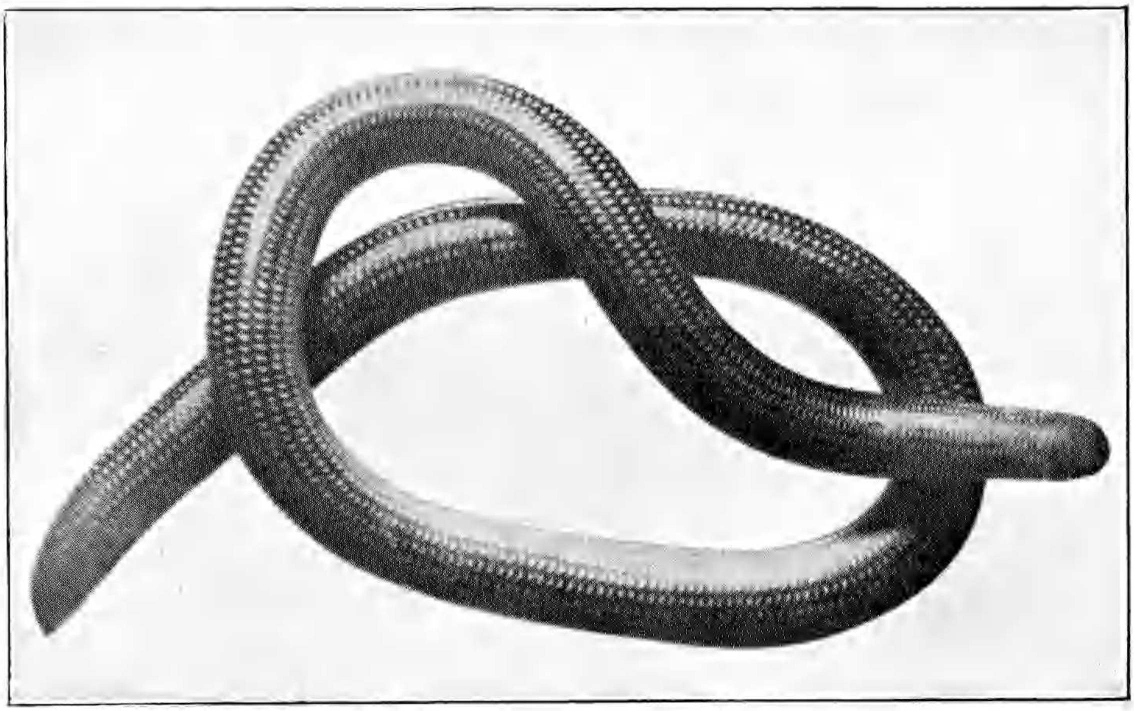

Fig. 7. *Typhlops australis*. Natural size.

WOMA, Aspidites ramsayi Macleay.

Figs. 8, 9.

In my contribution to the account of the Museum Expedition to Strzelecki and Cooper Creeks (⁶), the Woma of the Cooper Creek natives was identified with the python *Aspidites ramsayi*, and a photograph of a dead specimen 2,388 mm. in length, was published. I am now able to present a picture of a living

---

(5) Waite, Rec. S.A. Mus., i, 1918, p. 1 *et seq.*

(6) Waite, Trans. Roy. Soc., S.A., xli, 1917, p. 436, fig. 4-7, and pl. xxvii, fig. 2.

example (fig. 8). The snake was obtained at Cordillo Downs, and was presented to the Museum by Prof. J. B. Cleland. It was photographed under advantageous

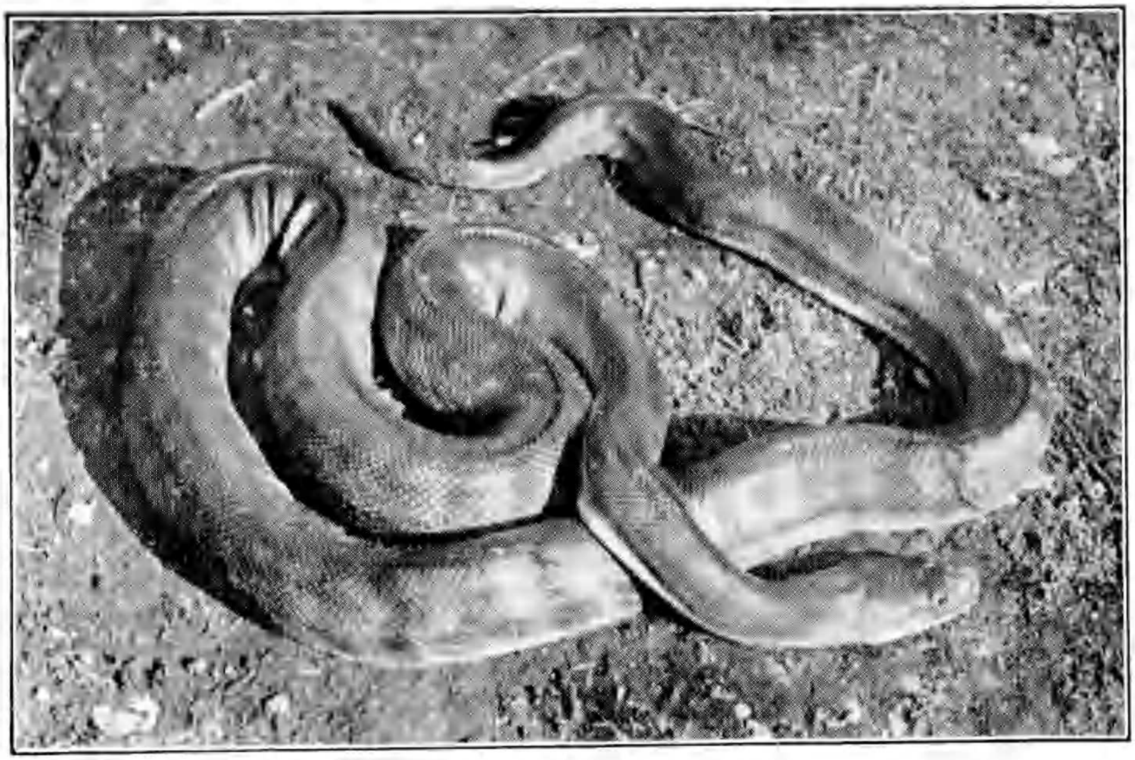

Fig. 8. Living example of *Aspidites ramsayi*, 7 ft. 10 in. in length.

conditions, and the picture well shows the extent and disposition of the colour markings. In the paper referred to I furnished drawings of the profile and upper part of the head of this species, and these are now supplemented by an illustration of the under-surface, as seen in the recent example (fig. 9).

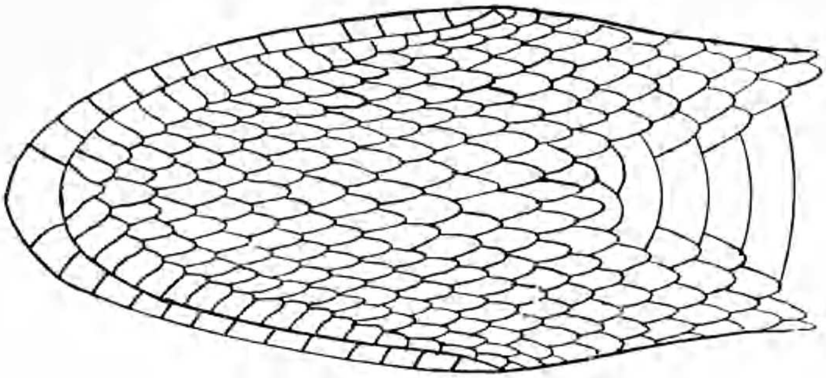

Fig. 9. Lower view of head of *Aspidites ramsayi*. Natural size.

GREY-BELLIED SNAKE, Demansia textilis, var.

Figs. 10, 11.

In January last I spent a week, in company with my colleague, Prof. F. Wood Jones, on the northern end of Coffin's Bay Peninsula, on the west coast of Eyre Peninsula. From its resemblance to a prancing, though headless, horse, the remarkable headland is also known as Horse Peninsula. What are, in winter, doubtless shallow lakes become dry flats in summer, supporting low herbage only. On these flats we frequently disturbed snakes of a particularly active species, which I did not then recognize. The ground bordering the flats is riddled with rabbit burrows, into which the reptiles rapidly disappear when disturbed. The location of these burrows is evidently well known to the snakes, so that, although reasonably expert "at the game," we found it impossible to capture them alive or uninjured. The snake usually sighted us before we had discovered its presence, and disappeared down a not far distant burrow ere we could reach it. The gun was the only alternative, and all the specimens secured were shot. Several of those thus disabled were not obtained, for sometimes a snake, blown almost in two, would manage to escape; the fore portion, perhaps nine inches in length, taking with it two feet or more of body and tail, attached

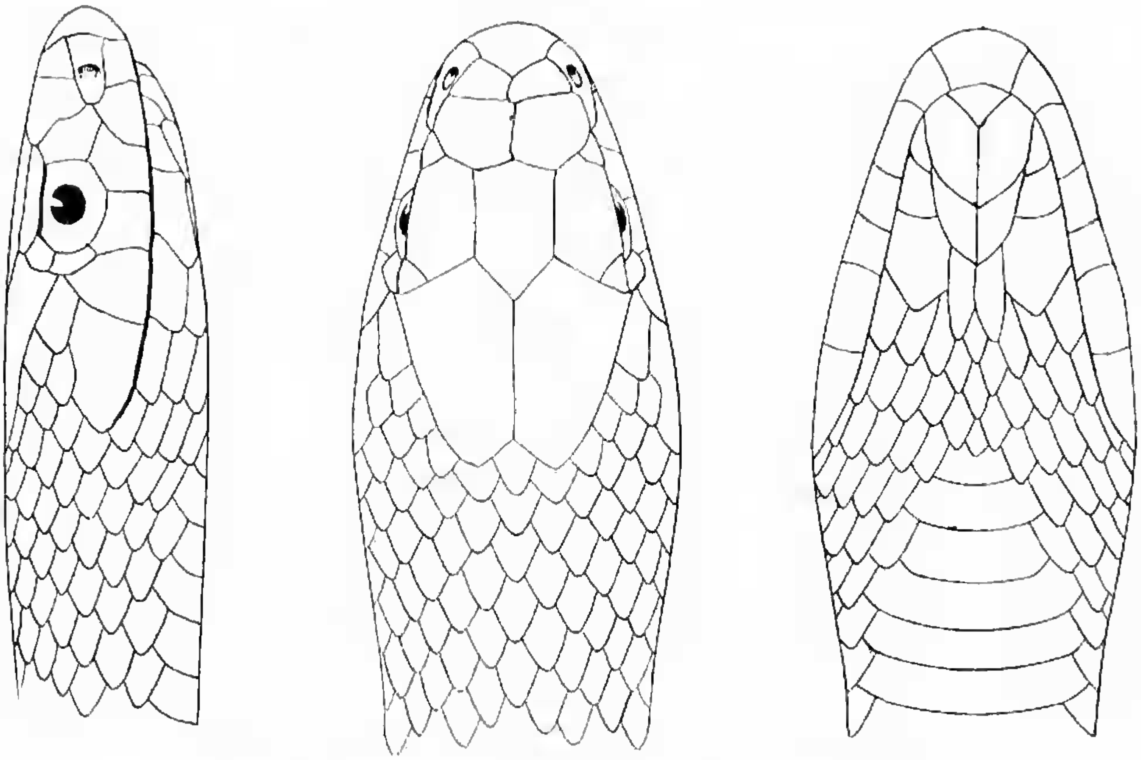

Fig. 10. Head of *Demansia textilis* var. *inframacula*, × 2.

by little more than a slender shred of tissue. Specimens arrested in this damaged condition put up a most determined fight, and bit savagely at anything presented to them. It was remarked that, long after the head and fore end were dead, the remaining portion of body and tail continued in vigorous reflex action.

A subsequent examination of the specimens obtained, indicates that they cannot be structurally distinguished from *Demansia textilis*, but as the remarkable colouration and ornamentation are alike in all examples seen, and notably different, especially in the lower portions, from typical specimens of our common Brown Snake, a varietal name, at least, may be accorded to the Coffin Bay Peninsula form.

Demansia textilis var. **inframacula** nov.

Figs. 10, 11.

Seven small teeth follow the fang. The horizontal diameter of the eye is twice its distance from the mouth: the rostral is wider than deep, the portion visible from above measures two-thirds its distance from the frontal; internasal suture about half that of the prefrontals; frontal slightly broader than either supra-ocular, its breadth three-fifths its length, which is equal to its distance from the end of the snout; parietals very large, as long as their distance from the rostro-nasal suture; their suture equal to the length of the frontal; nasal entire in short contact with the single large preocular; two postoculars in contact with the parietal; temporals 1+2. Six upper labials, first two in contact with the nasal, third and fourth entering the eye, sixth the largest. Mental triangular. Seven lower labials, the first broadly in contact with its fellow and excluded from the third labial; the first, third, and fourth broadly, the second barely, in contact with the anterior chin shield, the suture of which is shorter than that of the first labial but longer than that of the posterior chin shield, the bifurcation of the latter pair occupied by a single scale.

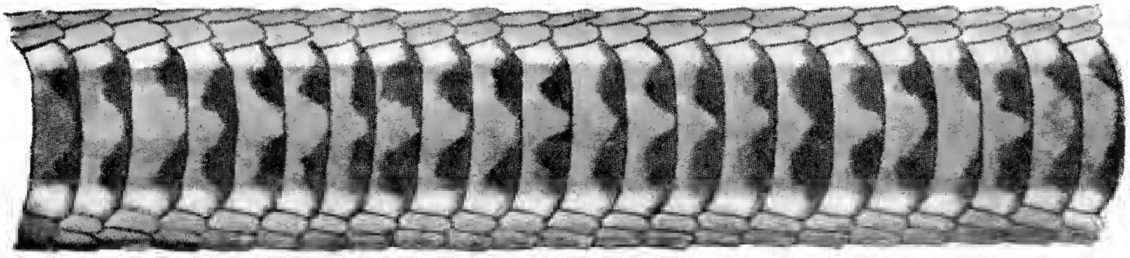

Fig. 11. Portion of ventral scales of *Demansia textilis* var. *inframacula*. (The drawing is somewhat diagrammatic, for the lower lateral scales are not visible in a ventral view, the scutes extending the entire width of the body.)

Scales in 17 rows round the middle of the body, 22 round the neck; ventrals 190, forming a slight rounded ridge along each side; anal divided; subcaudals in 62 pairs, all divided.

Colours. Warm umber brown above, black patches on the head, the scales on the upper part of the body and tail interspersed with isolated black scales, which are massed on the vertebral line, forming a double row, or, in parts, a single row only. The ventrals above the slight angularity are paler than the upper surface, their median portion is dark grey; on the throat and fore part of the body, the grey ground colour is largely obscured with black, which, further back, divides, forming on each scute two black patches, usually separated on the median line as illustrated in fig. 11. The condition of the markings is continued under the tail, but after the first inch they again become median.

Total length, 1,055 mm.; tail, 190 mm.

In a second specimen, 960 mm. in length, in which the tail is 160 mm., there are 198 ventral scutes, and the subcaudals are in 58 pairs.

The unfamiliar appearance of this snake, coupled with the circumstance that all specimens seen were identical in colouration, suggested that it was a species hitherto undescribed. As, however, it exhibits no external structure differing from *D. textilis*, it is regarded as a melanotic variation developed locally under almost insular conditions.

Albinism appears to be rare in snakes, though a cobra and others have furnished examples. Melanism, on the other hand, is not uncommon, at least in some of our species. Examples of our common Black Snake (*Pseudechis porphyriacus*), normally distinguished by its characteristic red belly, are not infrequently found, in which the red is replaced by dark grey. On Eyre Peninsula, and on the southern portions of this State, melanotic varieties of the Tiger Snake (*Notechis scutatus*) are frequently met with, while on Franklin Island, Kangaroo Island, and in Tasmania this is the dominant form. Mr. Kinghorn has distinguished specimens from Kangaroo Island by the varietal name *N. scutatus* var. *niger* (7). A melanotic variety of *D. textilis* is now added and, though so apparently distinct, the black markings of the ventral scutes may be correlated with the smaller pale red or brown spots so often seen in the Brown Snake, especially in young examples. Melanism on the dorsal surface is expressed in the blackening of certain scales, more particularly of those on or near the vertebral line.

---

(7) Kinghorn, Rec. Aust. Mus., xiii, 1921, p. 145, pl. xxvi, fig. 6-8, and xiv, 1924, p. 165, fig. 2, 3.

BLACK-NAPED SNAKE, Denisonia gouldii Gray.

Figs. 12, 13.

Though Flinders Island, in the Nuyts' Archipelago, has been several times visited by collectors, no snake has hitherto been recorded therefrom.

In March last, however, the omission was remedied by the agency of Mr. W. S. Bascomb, who brought to the Museum a small snake, taken on Flinders Island, and the only specimen he has seen there.

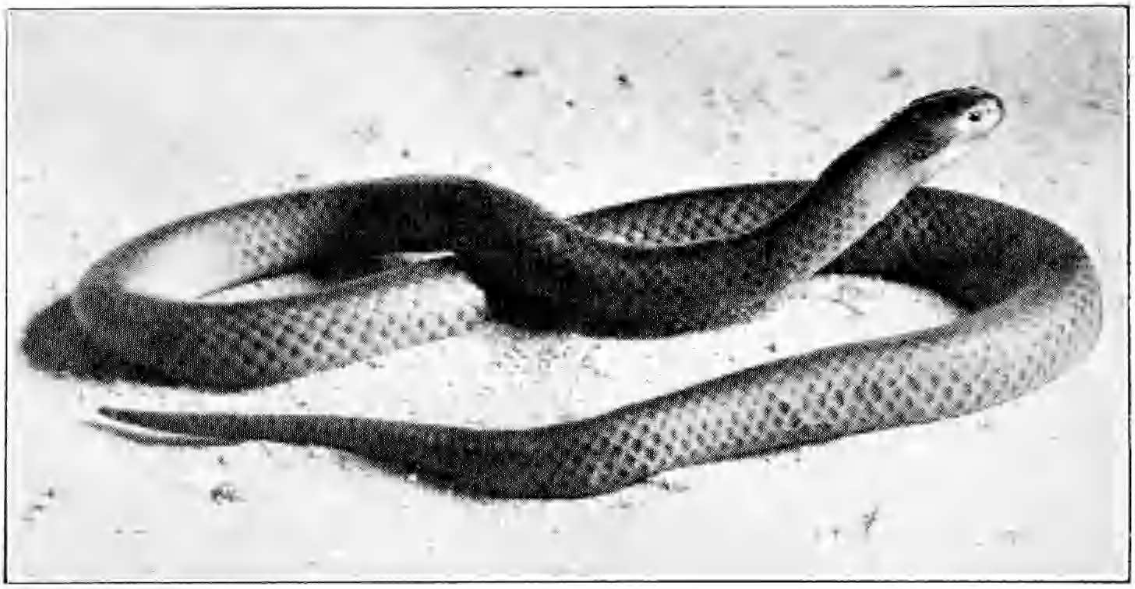

Fig. 12. *Denisonia gouldii* taken on Flinders Island. Natural size.

It proves to be an example of *Denisonia gouldii*, the colour markings being typical of South Australian examples, in which the anterior half of each scale on the back and sides is black. In the Flinders Island example the three median dorsal scales are entirely black, so that a black vertebral line arises from the characteristic hood, and is continued along the whole length of the body; on the tail the line is confined to one scale in width, there being only four scales around its hinder part, and the terminal scale is twice as long as the others, and undivided, like a ferule of a walking-stick.

A photograph of the specimen is shown in fig. 12, and drawings of the head scales in fig. 13.

In connection with the name Nuyts' Archipelago, used above, opportunity may here be taken to correct an error in a former paper of mine (8). In dealing with the snakes of St. Francis Island, I pointed out that, as the name of the Dutchman after whom the group was designated was not Nuyt, but Nuyts, the name of the group should be Nuyts' Archipelago. Unfortunately, the final apostrophe was dropped after my revision, and the paragraph, as printed, thus became meaningless.

---

(8) Waite, Trans. Roy. Soc., S.A., xlvii, 1923, p. 127.

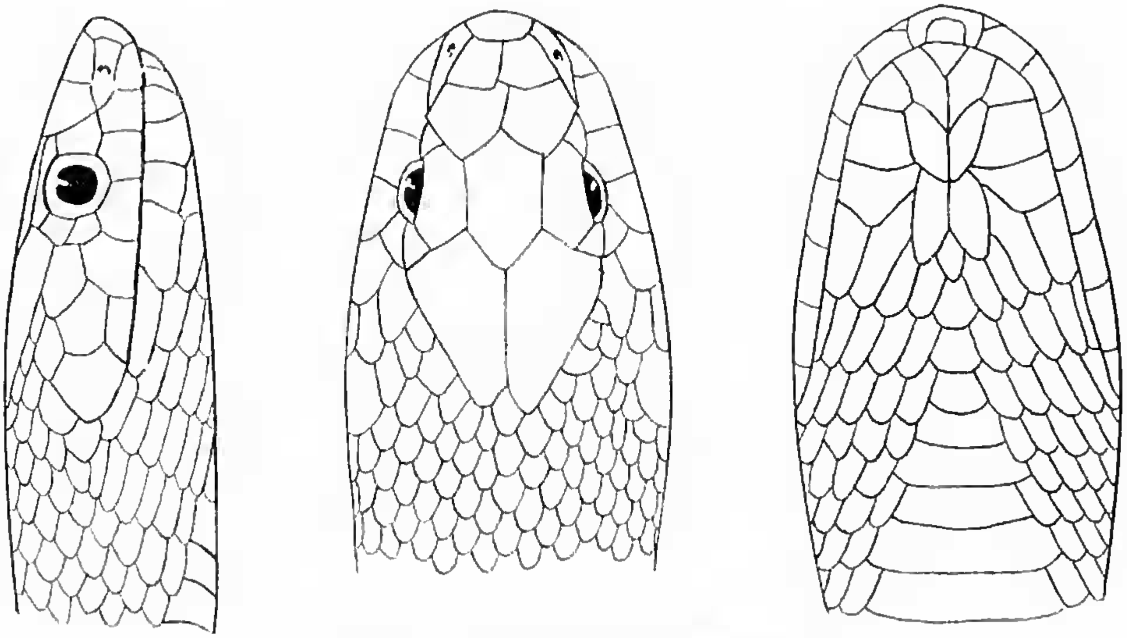

Fig. 13. Head of *Denisonia gouldii*. × 3.

DESERT BANDED SNAKE, Rhynchelaps bertholdi Jan.

Figs. 14, 15.

Travellers by the Transcontinental East-West Railway arrive at Adelaide or Perth not infrequently with a small reptile as an addition to their luggage. It is usually a lizard, less commonly a snake. The train is met at several of the stations *en route* across the treeless plains by small parties of natives, who offer for sale or exchange for tobacco, specimens of the reptiles. The lizard is *Moloch horridus*, the snake *Rhynchelaps bertholdi*, perhaps the prettiest of all our snakes, its colour varying from pale yellow to reddish orange, crossed with about thirty black bands.

Advantage was taken of the arrival of a recent specimen to obtain the photograph here reproduced natural size (fig. 14), and to furnish drawings of the head shields (fig. 15).

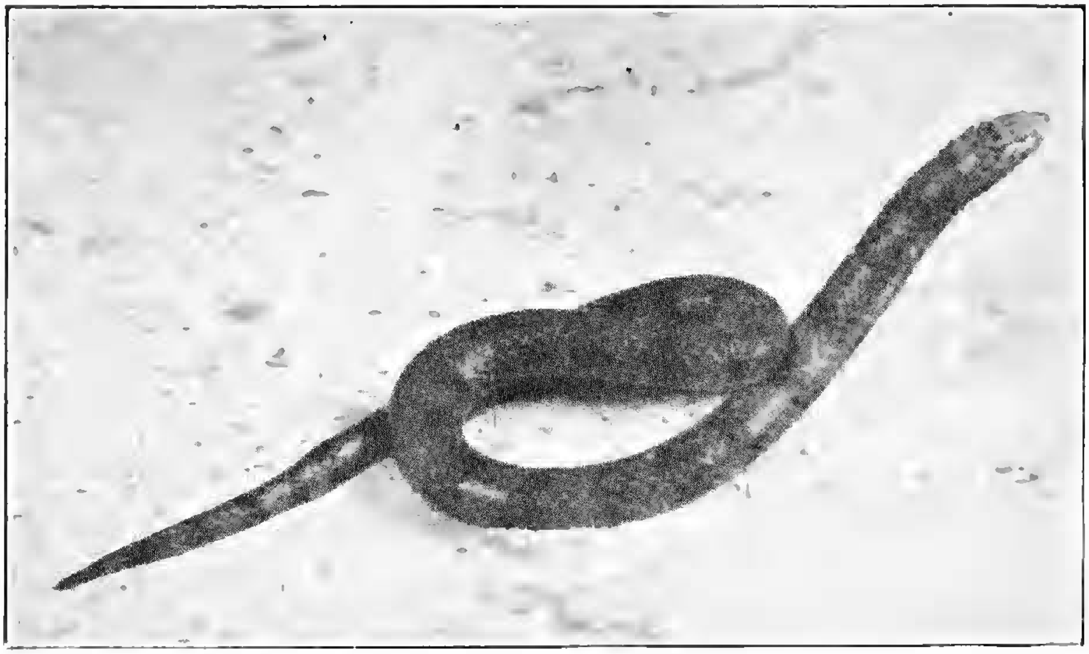

Fig. 14. *Rhynchelaps bertholdi*. Natural size.

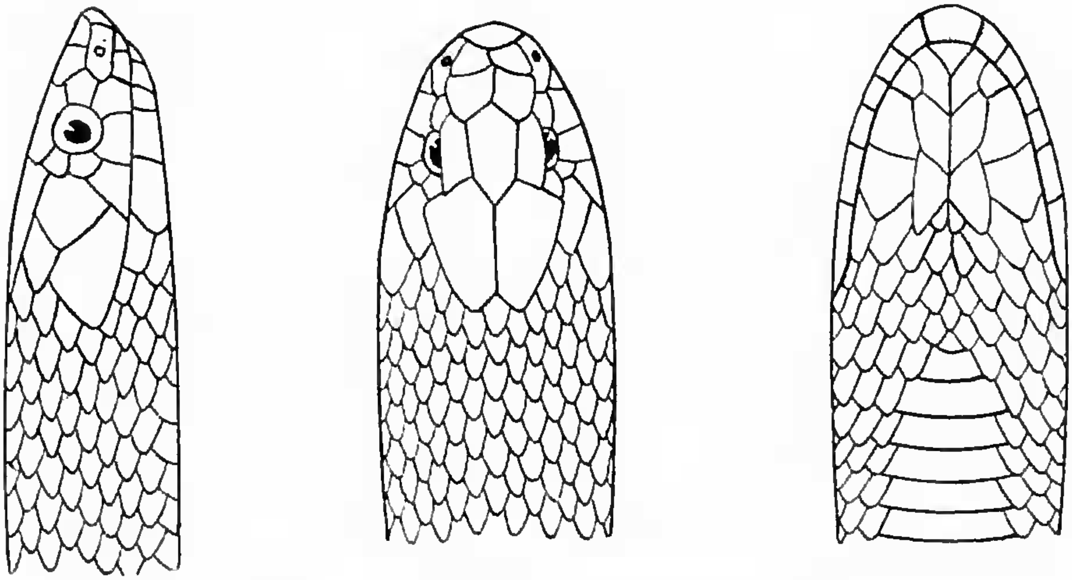

Fig. 15. Head of *Rhynchelaps bertholdi*. × 4.

BATRACHIA.

SWAMP FROG, Limnodynastes dorsalis Gray.

This frog is common on the swamps of Flinders Chase, Kangaroo Island, where the water in some cases is so shallow that the tracks made by the frogs, in swimming, remain visible for days, the swish of the legs disturbing the surface layer of extremely fine mud. An attempt to wade the swamp results in one sinking to the knee, and sometimes deeper, in the treacherous mud.

The frogs appear to enjoy a quiet bask in the warm water, squatting on the mud with their heads above the surface; when disturbed they plunge into the soft mud and disappear from sight, but a sudden dash with the edge of the net to a depth of five or six inches will generally secure them.

Leeches abound in the water, and every frog I saw had several of these annelids attached to it. Pairing frogs, being unable to rid themselves of the temporary parasites, had, literally, scores of leeches attached to their bodies, like so many streamers.

If the swamps were visited in the post-breeding season of the frogs, there is little doubt that leeches would be found attached to the tadpoles also, as in the case of larvae seen elsewhere.

Addendum.

After writing the foregoing I received, by courtesy of Miss Procter, her paper on living snakes (⁹), in which she describes and illustrates an albino example of the Indian Cobra. She writes: "Albino snakes are excessively rare, and, although individuals of various species have been recorded from time to time, I cannot find any reference to an albino Cobra." My reference to such a one was culled from two illustrations of an individual published in the London "Times" (weekly) of September 1, 1924, and they obviously relate to the specimen later figured by Miss Procter.

---

(9) Procter, P.Z.S., 1924, p. 1125, pl. 1.